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I, LEANNE MYNOTT, MANAGER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the complete specification in connection with Innovation Patent No. 2004100280 for a patent by INDUSTRIAL EVOLUTION DESIGN PTY LTD as filed on 26 February 2004.



WITNESS my hand this
Eighth day of December 2004

A handwritten signature in black ink, appearing to read 'LM'.

LEANNE MYNOTT
MANAGER EXAMINATION SUPPORT
AND SALES

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AUSTRALIA
Patents Act 1990

COMPLETE SPECIFICATION
STANDARD PATENT

Applicants:

BRETT FRANZI AND JENNINE FRANZI

Invention Title:

COMPUTER MOUNT BOARD FOR MOTOR VEHICLE

The following statement is a full description of this invention, including the best method of performing it known to me/us:

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Computer Mount Board for Motor Vehicle

The present invention relates to a load mounting device and is more particularly concerned with such 5 devices suitable for mounting on the seat of a vehicle and to be secured on the seat both in normal usage and in the event of any emergency situation such as rapid braking or indeed an accident involving impact.

10 Baby capsules and children's car seats have been developed and some are adapted to be anchored into position using standard seat belt arrangements. However these devices are for specific types of loads and do depend on full insertion and latching of the seat belt 15 arrangement. This can be a cumbersome task and there is a danger it may be imperfectly formed.

However these devices offer no general solution to a device for mounting and supporting a load such as may be 20 required when perhaps only a lap belt is available and/or a load is desired to be mounted on a passenger seat adjacent a vehicle driver such as a courier.

The present invention is concerned with novel and 25 useful alternatives to prior art proposals including developments over and above a prior publication that has been found through searching namely WO98/33678. This prior publication is an example of a work station to be secured in a vehicle via a seat belt but apparently 30 depending entirely on correct positioning and engagement of the seat belt to retain the device from any forward motion or during an impact accident. To the best of the applicant's knowledge, this device is merely a prior

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publication and has not become knowingly accepted, used or part of the actual knowledge in the relevant industries in Australia or elsewhere.

5 The present invention consists in a device for mounting and supporting a load while safely retained on a seat having a co-operating seat belt, the device having:

(a) a base to be supported on a seat base;

10 (b) a rear portion for engaging with a seat back;

(c) a forward portion for engaging with a seat belt designed as a lap restraint;

15 (d) means for mounting and retaining during normal travel a load supported on the base and the device being characterised by:-

20 (e) the rear portion having first and second retaining elements each extending generally a substantial angle to the base and configured to engage with surfaces of the seat structure extending generally at a substantial angle to the seat base such that secure engagement is achieved to resist forward motion of the device relative to the seat, irrespective of whether there is correct and effective engagement of the seat belt.

25 While one version of the invention has the rear portion of generally T-shaped form with the first and second retaining elements extending respectively upwardly and downwardly as rear projecting walls to engage respectively the rear of a back rest and the rear of the

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seat, other embodiments may be preferred as advantageous. An important range of embodiments which are advantageous are those where the first and second retaining elements are spaced from one another by an amount corresponding to 5 the thickness of a back rest and extend upwardly from the base and are configured to engage under a lower portion of the back rest to retain the device in position.

In one embodiment the device is in the form of a 10 moulded base having integral upstanding rear walls spaced from one another to form a U-shaped cross sectional shape to be engaged under the rear of a seat back. This is especially advantageous when the seat back is in the form of a resilient cushion and the installation is achieved by 15 the base being lowered at a steep angle to engage the walls respectively around the lower portion of the back cushion and then to pivot the device downwardly to lay the base down to be supported on the seat base.

20 This arrangement lends itself to specially advantageous industrial designs such as those produced by moulding in one piece with smooth profiles over the whole structure.

25 Preferably, the base has a substantially flat body portion and an upwardly extending front portion having a forward edge recess for accommodating and retaining a lap seat belt. One embodiment can have a smoothly curved nose having a grooved profile for retaining a lap belt with 30 upper and lower edges for restraining seat belt movement upwardly or downwardly.

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For many applications it is advantageous to provide an arrangement on the front portion for swivel mounting of an appliance such as a hand held computer and to provide a quick release system for clamping such a computer into 5 position and removing it as may be required.

Such an embodiment lends itself to arrangements in which a receiving tray is provided on the base portion between the mounting for the computer and the seat back 10 for documents to be retaining in position.

Such a device can readily be constructed and, subject to traffic regulations, even used while the driver is controlling a moving vehicle. The computer could for 15 example be driven by a navigation system providing navigation information visually and/or through audio communications as well as provide other functions.

Most importantly however, devices according to the 20 present invention can be safely and easily installed in most vehicles and lend themselves to being removed and changed from vehicle to vehicle according to the user's needs. Reliable location with secure engagement with a cushioned conventional seat back can be achieved without 25 damage to the vehicle and at least preferred embodiments can minimise the chance of the device becoming a projectile even if the seat belt is not perfectly engaged.

For illustrative purposes and embodiment of the 30 invention will now be described with reference to the accompanying drawings of which:

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Figure 1 is a perspective view from the front of the first embodiment;

Figure 1A is a view corresponding to figure 1 with an optional swivel mount installed for a hand held 5 computer bracket;

Figure 2 is a view from below of the embodiment of figure 1;

Figure 3 is a rear view of the embodiment of figure 1;

10 Figure 4 shows the embodiment of figure 1A installed in a vehicle; and

Figure 5 is an illustration of a second embodiment having a T-shaped end structure.

15 A load carrying device 10 shown in the drawings is designed to be suitable for one piece moulding in plastics material with smoothly curved profiles so as to be fitted onto a conventional vehicle seat as generally shown in figure 4. The device has a flat base 11 with upper 20 parallel side rails 12 to define a load carrying zone suitable for a file, a book or paperwork, the base having a curved front nose 13, a rear wall 15, and a rearwardly projecting interconnecting wall 16 leading to an upwardly curved back wall 17. The walls 15 and 17 each have 25 rounded corners and curved top edges 18 and 19 respectively.

The front nose 13 has a raised platform 20 having a mounting recess 21 for an accessory mounting bracket such 30 as the swivel bracket 21 shown in figure 1A. The swivel bracket 21 may mount a quick release cradle for an accessory such as a hand held computer. The front nose 13 also includes a curved skirt 22 extending between upper

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and lower collars 23 and 24, each of which are spaced radially outwardly from the skirt 22 and have respective flanges 25 which extend partially over the skirt 22 to define a receiving groove having retention lips for
5 accommodating and retaining a lap element of a conventional seat belt.

As shown in figure 2, to provide lightness and facilitate moulding, a cavity 30 extends into the nose
10 portion 30.

Usually a suitable accessory-receiving cradle is mounted to the pivotal bracket 21 and installation into a vehicle is to obtain the arrangement shown in figure 4 is
15 quickly and easily accomplished. The profile of the back wall 17 with its curved upper edge 19 is designed to facilitate being inserted below and behind the bottom edge of a conventional seat back cushion. The device is offered up at a steep angle of the base 11 to the seat
20 cushion, the wall 19 slid under the bottom of the seat back cushion and the device rotated downwardly to achieve the insertion with the seat back cushion then located between the walls 15 and 17. This can be effected with
25 the accessory bracket or cradle mounted to the swivel bracket 21.

It is intended that a lap belt then be secured around the nose and the attachment fastened. The design, however, resists forward projection of the device in the
30 event of an accident even if the lap belt is not correctly located, tensioned or closed.

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A typical application of the device is for fitting and moving between vehicles such as courier vehicles but the device in the form shown may be used in other installations of a similar character. Furthermore the 5 formation of the device can be altered.

Referring now to figure 5, a representation is provided of an alternative embodiment in which a generally T-shaped end structure is formed. In this case the 10 rearwardly extending interconnection wall 16A is planar and is dimensioned to have a width equivalent to the back seat cushion but has a thickened rearwardly extending integral wedge-shaped portion 16B to leave a rearwardly facing back wall onto which is screwed a rear strip 31. 15 The strip 31 has a curved rear wall 31A and a front wall 31B (not shown in the drawing) which is essentially parallel to the wall 15.

In summary, embodiments of the invention can be 20 formed in a light-weight, inexpensive and very portable form which can nevertheless be easily and reliably installed into conventional vehicle seats without risk of damage to upholstery. Embodiments can be smoothly curved and styled and produced in robust moulded plastics 25 materials with the ability to be fitted with a wide range of support cradles for different objects such as different hand held computers.

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CLAIMS

The claims defining the invention are as follows:

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1. A device for mounting and supporting a load while safely retained on a seat having a co-operating seat belt, the device having:

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(a) a base to be supported on a seat base;

(b) a rear portion for engaging with a seat back;

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(c) a forward portion for engaging with a seat belt designed as a lap restraint;

(d) means for mounting and retaining during normal travel a load supported on the base and the device being characterised by:-

20

(e) the rear portion having first and second retaining elements each extending generally a substantial angle to the base and configured to engage with surfaces of the seat structure

25

extending generally at a substantial angle to the seat base such that secure engagement is achieved to resist forward motion of the device relative to the seat, irrespective of whether there is correct and effective engagement of the seat belt.

30

2. A device as claimed in claim 1, wherein the rear portion of generally T-shaped form with the first and

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second retaining elements extending respectively upwardly and downwardly as rear projecting walls to engage respectively the rear of a back rest and the rear of the seat, other embodiments may be preferred as advantageous.

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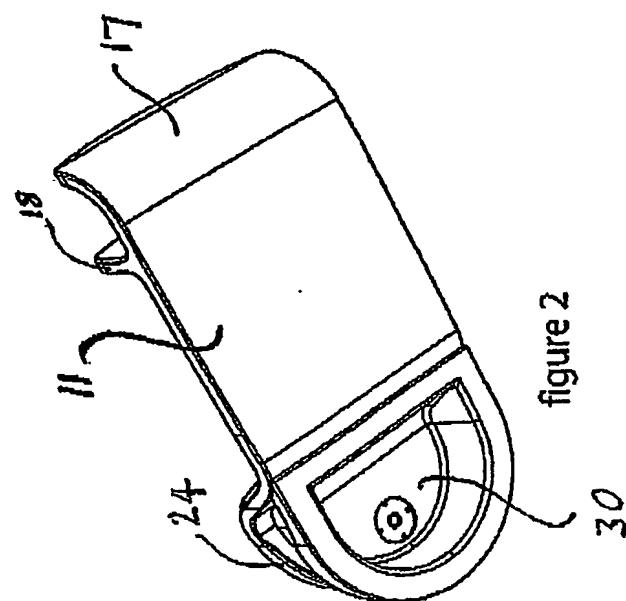
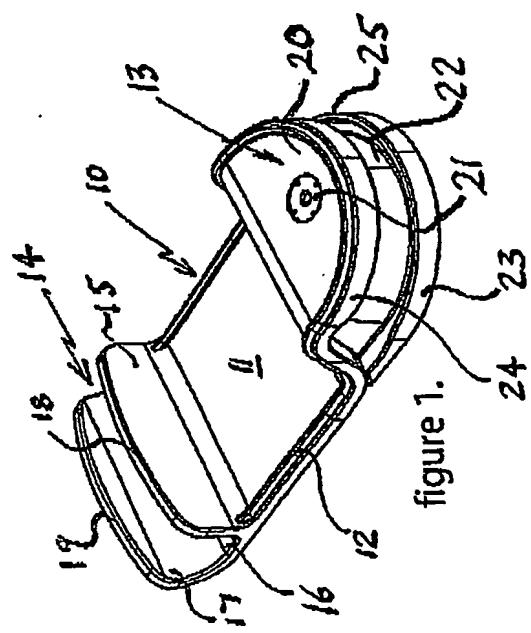
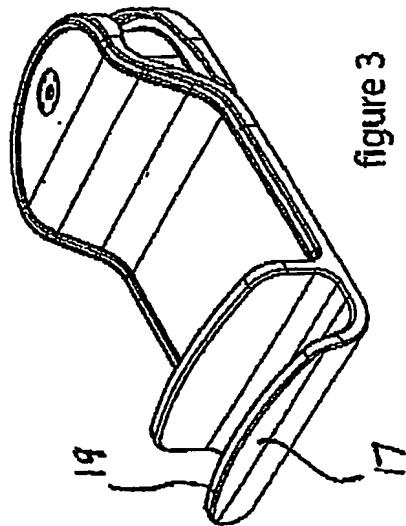
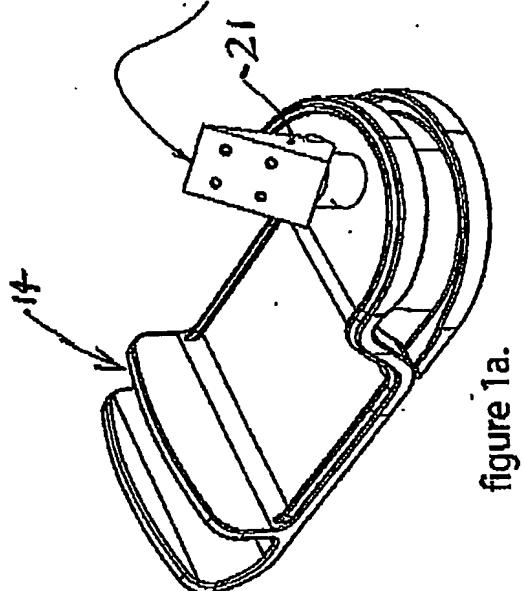
3. A device as claimed in claim 1, wherein the first and second retaining elements are spaced from one another by an amount corresponding to the thickness of a back rest and extend upwardly from the base and are configured to engage under a lower portion of the back rest to retain the device in position.
4. A device as claimed in claim 3, wherein the device is in the form of a moulded base having integral upstanding rear walls spaced from one another to form a U-shaped cross sectional shape to be engaged under the rear of a seat back.
5. A device as claimed in any one of the preceding claims, and in the form of a one-piece plastic moulding.
6. A device as claimed in any one of the preceding claims, wherein the base has a substantially flat body portion and an upwardly extending front portion having a forward edge recess for accommodating and retaining a lap seat belt.
7. A device as claimed in claim 6, wherein the device has a smoothly curved nose having a grooved profile for retaining a lap belt with upper and lower edges for restraining seat belt movement upwardly or downwardly.

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8. A device as claimed in any one of the preceding claims, wherein a receiving tray is provided on the base portion between the mounting for the computer and the seat back
9. A device substantially as herein described with reference to Figures 1-4 or Figure 6 of the accompanying drawings.

Abstract

A load mounting device for mounting on the seat of a vehicle has a curved nose for engagement with a lap seat belt, a central load carrying portion and a rear portion for engaging the seat back so that retention of the device on the seat has the safety of both the seat belt and engagement with the seat back.



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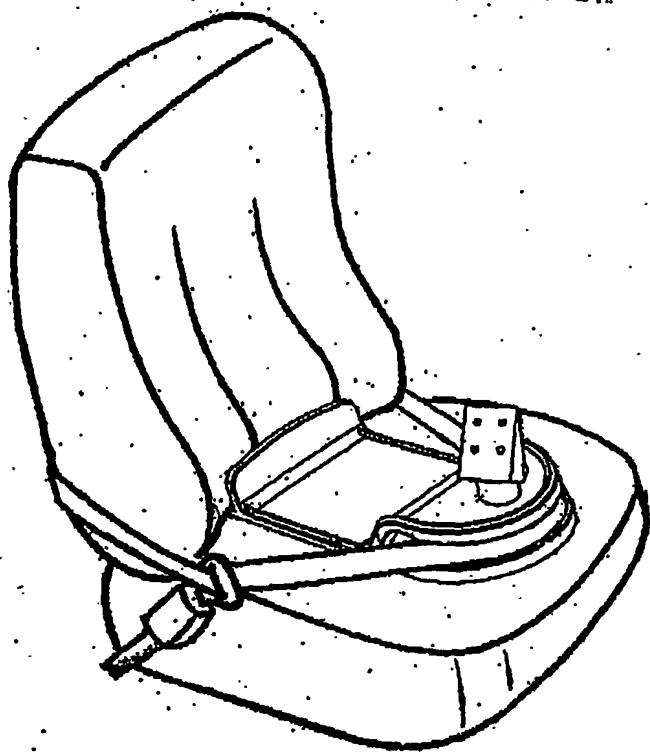
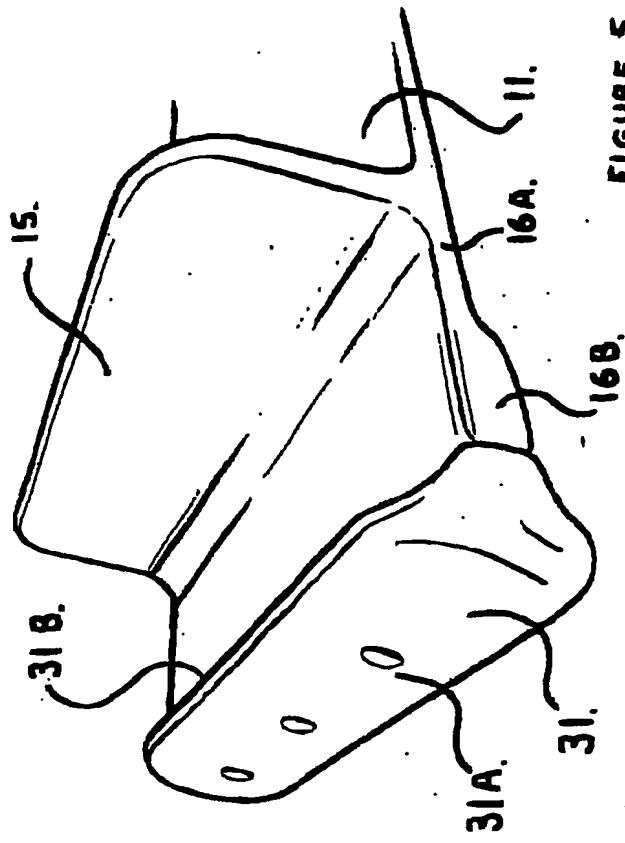


figure 4.

FIGURE 5.



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